

25 2002

Docket No. 23623-7060

**Certificate of Mailing/Transmission (37 C.F.R. § 1.8(a))**

[X] Pursuant to 37 C.F.R. § 1.8, I hereby certify that this paper and all enclosures are being deposited with the United States Postal Service as first class mail on the date indicated below in an envelope addressed to the Commissioner for Patents, Washington D.C. 20231

[ ] Pursuant to 37 C.F.R. § 1.6(d), I hereby certify that this paper and all enclosures are being sent via facsimile on the date indicated below to the attention of Examiner \_\_\_\_\_ at Facsimile No. \_\_\_\_\_ at \_\_\_\_\_ a.m./p.m.

Dated: June 21, 2002 Name of Person Certifying: [Signature]  
Printed Name: Mary K. Zimmerman

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Volker Schellenberger et al.  
Filing Date: October 10, 2001  
Serial No.: 09/975,139  
Title: INFORMATION RICH LIBRARIES

Assignee: Genencor International, Inc.  
Examiner: Not Yet Assigned  
Group Art Unit: 1645

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Commissioner for Patents  
Washington, D.C. 20231

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**INFORMATION DISCLOSURE STATEMENT**

Sir:

In accordance with 37 C.F.R. § 1.56, the references listed on the attached Forms PTO-1449a and PTO-1449b are being brought to the attention of the Examiner for consideration in connection with the examination of the above-identified patent application.

**I. Timing of the Information Disclosure Statement:**

This Information Disclosure Statement is filed:

- ☐ With the new patent application submitted herewith (37 C.F.R. § 1.97(a)).
- ☐ Within three months after the filing date of the application or within three months after the date of entry of the national stage of a PCT application as set forth in 37 C.F.R. § 1.491.
- ☒ Before the mailing date of a first Office action on the merits. In the event, however, that an Office Action has crossed in the mail with this Information Disclosure Statement, the Commissioner is hereby authorized to charge Deposit Account No. 50-1189, Docket No. 23623-7060 for any fees required pursuant to 37 C.F.R. §§ 1.17(p) or 1.17(i)(1).

This Information Disclosure Statement is filed:

- ☐ After the first Office Action and more than three months after the application's filing date; or PCT national stage date of entry filing but, as far as is known to the undersigned, prior to the mailing date of either a final rejection or a notice of allowance, whichever occurs first, and the Commissioner is hereby authorized to charge Deposit Account No. [ ] for the fee (\$180) set forth in 37 C.F.R. § 1.17(p) and any additional required fees.

This Information Disclosure Statement is filed:

- ☐ After the mailing date of either a final rejection or a notice of allowance, whichever occurred first, and is accompanied by the fee (\$180.00) set forth in 37 C.F.R. § 1.17(i)(1) and a certification as specified in 37 C.F.R. § 1.97(e), as checked below. This document is to be considered as a petition requesting consideration of the Information Disclosure Statement.

The undersigned certifies that:

- ☐ Each item of information contained in the Information Disclosure Statement was first cited in any communication mailed from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement.
- ☐ No item of information contained in this information disclosure statement was cited in a communication mailed from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

## II. Copies of the Cited Items:

- ☒ Copies of all of the items listed on the attached Forms PTO-1449a and PTO-1449b are enclosed.
- ☐ Copies of only the following items listed on the attached Form PTO-1449 are enclosed: \_\_\_\_\_.
- ☐ Copies of those items which are marked with an asterisk (\*) in the attached Form PTO-1499 are not supplied because they were previously cited by or submitted to the Patent Office in a prior Application No. \_\_\_\_\_, filed \_\_\_\_\_ and relied upon in this application for an earlier filing date under 35 U.S.C § 120. See 37 C.F.R. § 1.98(d).
- ☐ Copies of those items which are marked with an asterisk (\*\*) in the attached Form PTO-1499 were cited in a foreign examination report in a related case. A copy of the search report and the cited references not already of record in this application are attached hereto.

## III. Concise Explanation of Relevance:

- ☐ A concise explanation of relevance of the items listed on Forms PTO-1449a and PTO-1449b is not given.
- ☐ A concise explanation of relevance of [some of] the items listed on Form PTO-1449 is in the form of an English language copy of a Search Report from a foreign

patent office, issued in a counterpart application, which refers to the relevant portions of the references (copy attached).

**IV. Conclusion:**

Citation of the above documents shall not be construed as:

1. an admission that the documents are necessarily prior art with respect to the instant invention;
2. a representation that a search has been made, other than as described above; or
3. an admission that the information cited herein is, or is considered to be, material to patentability as defined in § 1.56(b).

It is respectfully requested that the Examiner indicate consideration of the cited references by returning a copy of the attached forms PTO-1449a and PTO-1449b with initials or other appropriate marks.

The Commissioner is hereby authorized to charge Deposit Account No. 50-1189, Docket No.: 23623-7060 for any additional fees required in connection with the filing of this Information Disclosure Statement.

DATE: 6/14/02

Respectfully submitted,

By: David W. Maher  
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Substitute for form 1449A-PTO

# **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 3

Complete if Known

Application Number 09/975,139  
 Filing Date October 10, 2001  
 First Named Inventor Volker Schellenberger, et al.  
 Art Unit 1645  
 Examiner Name Not Yet Assigned  
 Attorney Docket Number 23623-7060

## **U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number - Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YY	Name of Patentee or Application of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	US-5,565,332	10-15-96	Hoogenboom et al.	
	2	US-5,571,698	11-05-96	Ladner et al.	
	3	US-5,698,426	12-16-97	Huse	
	4	US-5,723,323	03-03-98	Kauffman et al.	
	5	US-5,830,721	11-03-98	Stemmer et al.	
	6	US-5,863,787	01-26-99	Chang et al.	
	7	US-5,922,545	07-13-99	Mattheakis et al.	
	8	US-6,093,573	07-25-00	Beamer et al.	
	9	US-6,107,059	08-22-00	Hart	
	10	US-6,114,149	09-05-00	Fry et al.	

## **FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YY	Name of Patentee or Application of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
	11	WO 91/19813	12-26-91	The University of Colorado Foundation, Inc.		
	12	WO 92/05285	04-02-92	Fred Hutchinson Cancer Research Center		
	13	WO 92/14843	09-03-92	Gilead Sciences, Inc.		
	14	WO 00/46344 A3	08-10-00	Diversa Corporation		

Examiner's  
SignatureDate  
Considered

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

Substitute for form 1449B-PTO

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 2 of 3

Complete if Known

Application Number 09/975,139  
 Filing Date October 10, 2001  
 First Named Inventor Volker Schellenberger, et al.  
 Art Unit 1645  
 Examiner Name Not Yet Assigned  
 Attorney Docket Number 23623-7060

## OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher city and/or country where published	T <sup>2</sup>
	15	Search Report Dated February 25, 2002	
	16	ADACHI, J. and M. HASAGAWA "Model of Amino Acid Substitution in Proteins Encoded by Mitochondrial DNA" <i>J. Mol. Evolution</i> (1996) 42:459-468	
	17	LÜCK, R. et al. "Thermodynamic Prediction of Conserved Secondary Structure: Application to the RRE Element of HIV, the tRNA-like Element of CMV and the mRNA of Prior Protein" <i>J. Mol. Biol.</i> (1996) 258:813-826	
	18	TUERK, C. et al. "RNA pseudoknots that inhibit human immunodeficiency virus type 1 reverse transcriptase" <i>PNAS USA</i> (August 1992) 89(15):6988-6992	
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	20	BALLINGER, M.D. et al. "Designing Subtilisin BPN' To Cleave Substrates Containing Dibasic Residues" <i>Biochemistry</i> (1995) 34:13312-13319	
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	22	SMITH, T.F. and M.S. WATERMAN "Comparison of Biosequences" <i>Adv. Appl. Math.</i> (1981) 2:482-489	
	23	NEEDLEMAN, S.B. and C.D. WUNSCH "A General Method Applicable to the Search for Similarities in the Amino Acid Sequence of Two Proteins" <i>J. Mol. Biol.</i> (1970) 48:443-453	
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	25	GRIBSKOV, M. et al. "Profile analysis: Detection of distantly related proteins" <i>PNAS USA</i> (July 1987) 84:4355-4358	
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	27	OVERINGTON, J. et al. "Environment-specific amino acid substitution tables: Tertiary templates and prediction of protein folds" <i>Protein Sci.</i> (1992) 1:216-226	
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	30	LOCKLESS, S.W. and R. RANGANATHAN "Evolutionarily Conserved Pathways of Energetic Connectivity in Protein Families" <i>Science</i> (October 1999) 286:295-299	
	31	GÖBEL, U. et al. "Correlated Mutations and Residue Contacts in Proteins" <i>Proteins</i> (1994) 18:309-317	
	32	Le NOVÈRE, N. et al. "Improved Secondary Structure Predictions for a Nicotinic Receptor Subunit: Incorporation of Solvent Accessibility and Experimental Data into a Two-Dimensional Representation" <i>Biophys. J.</i> (May 1999) 76:2329-2345	
	33	HUSE, W.D. et al. "Increased Antibody Affinity and Specificity by Codon-Based Mutagenesis" <i>Int. Rev. Immunol.</i> (1993) 10:129-137	
	34	KIRKHAM, P.M. et al. "Towards the Design of an Antibody that Recognises a Given Protein Epitope" <i>J. Mol. Biol.</i> (1999) 285(3):909-915	
	35	GOLDMAN, E.R. and D.C. YOUVAN "An Algorithmically Optimized Combinatorial Library Screened by Digital Imaging Spectroscopy" <i>Bio/Technology</i> (December 1992) 10:1557-1561	
	36	HUANG, W. and D.V. SANTI "Identification of Biologically Active Mutants by Combinatorial Cassette Mutagenesis: Exclusion of Wild-Type Codon from Degenerate Codons" <i>Anal. Biochem.</i> (1994) 218:454-457	
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## OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher city and/or country where published	T <sup>2</sup>
	38	TOMANDL, D. et al. "Optimizing doped libraries by using genetic algorithms" <i>J. Comp.-Aided Molec. Design</i> (1997) 11:29-38	
	39	KUNKEL, T.A. "Rapid and efficient site-specific mutagenesis without phenotypic selection" <i>PNAS USA</i> (January 1985) 82(2):488-492	
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	41	LYTTLE, M.H. et al. "Mutagenesis Using Trinucleotide $\beta$ -Cyanoethyl Phosphoramidites" <i>BioTechniques</i> (1995) 19(2):274-280	
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	51	SHI, X-B. et al. "Rapid PCR Construction of a Gene Containing Lym-1 Antibody Variable Regions" <i>PCR Methods Appl.</i> (1993) 3:46-53	
	52	CAO, Y. "Direct Cloning of a Chimeric Gene Fused by the Polymerase Chain Reaction" <i>Technique</i> (1990) 2:109-111	
	53	CHO, G. et al. "Constructing High Complexity Synthetic Libraries of Long ORFs Using <i>In Vitro</i> Selection" <i>J. Mol. Biol.</i> (2000) 297:309-319	
	54	FREE, Jr., S.M. and J.W. WILSON "A Mathematical Contribution to Structure-Activity Studies" <i>J. Med. Chem.</i> (July 1964) 7(4):395-399	
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	58	PAZOS, F. et al. "A graphical interface for correlated mutations and other protein structure prediction methods" <i>Comput. Appl. Biosci.</i> (1997) 13(3):319-321	
	59	SIEZEN, R.J. and J.A.M. LEUNISSEN "Subtilases: The superfamily of subtilisin-like serine proteases" <i>Protein Science</i> (1997) 6:501-523	
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Examiner's Signature		Date Considered	

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609 Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>2</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

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